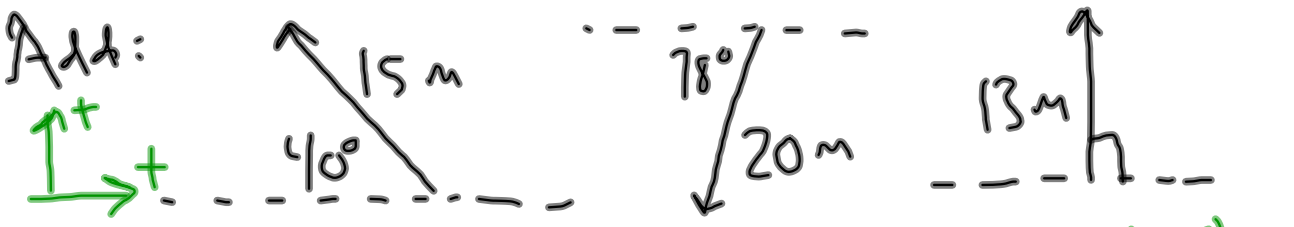
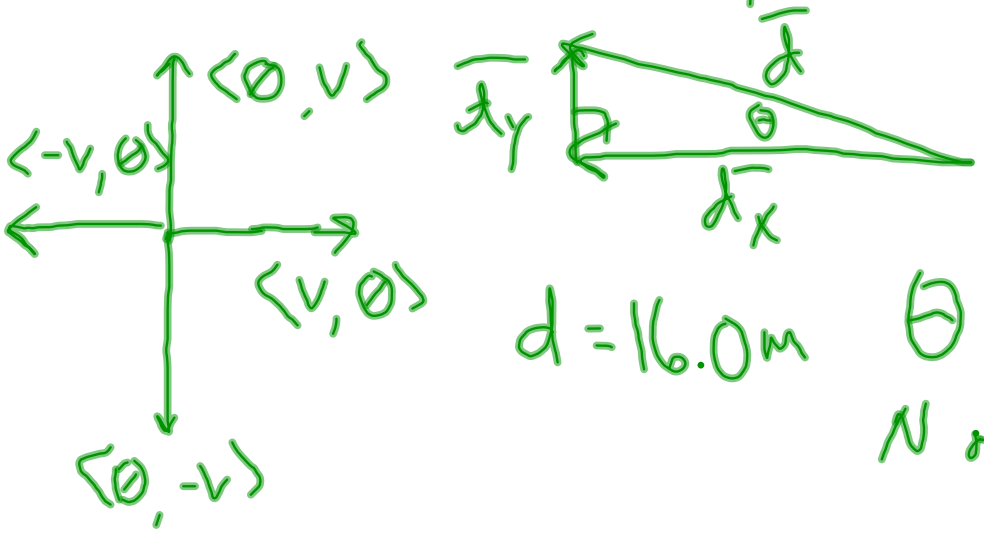


$a_x = -(15\text{ m})\cos(40°)$ $\quad a_y = (15\text{ m})\sin(40°)$

$b_x = -(20\text{ m})\cos(78°)$ $\quad b_y = -(20\text{ m})\sin(78°)$

$+\ c_x = (13\text{ m})\cos(90°)$ $\quad +\ c_y = (13\text{ m})\sin(90°)$

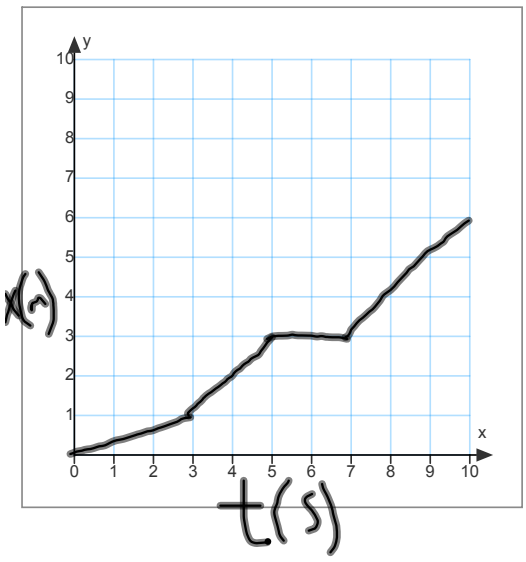
$d_x = -15.6\text{ m}$ $\quad d_y = 3.10\text{ m}$

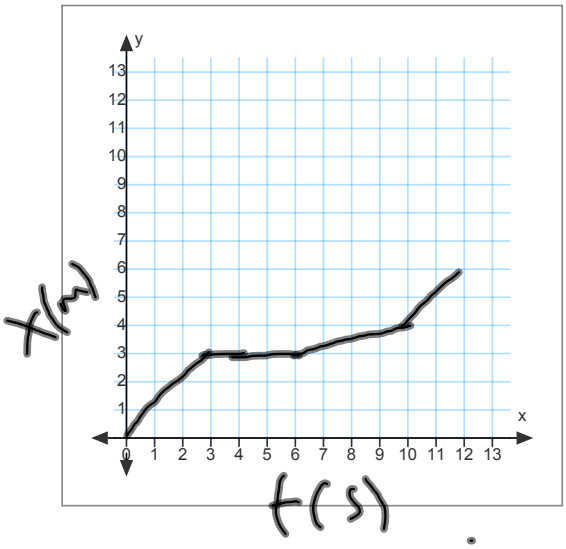


$d = 16.0\text{ m}$ $\quad \theta = 11.2°$ N of W

$\vec{d} = 16.0\text{ m}$ @ $11.2°$ N of W

Displacement and Velocity Notes 4th Block 8.22.11





Velocity:

- average → v ; units: m/s

$$v = \frac{\Delta x}{\Delta t} = \frac{x_f - x_i}{t_f - t_i}$$

100 km in 1 h $\quad v = 100$ km/h

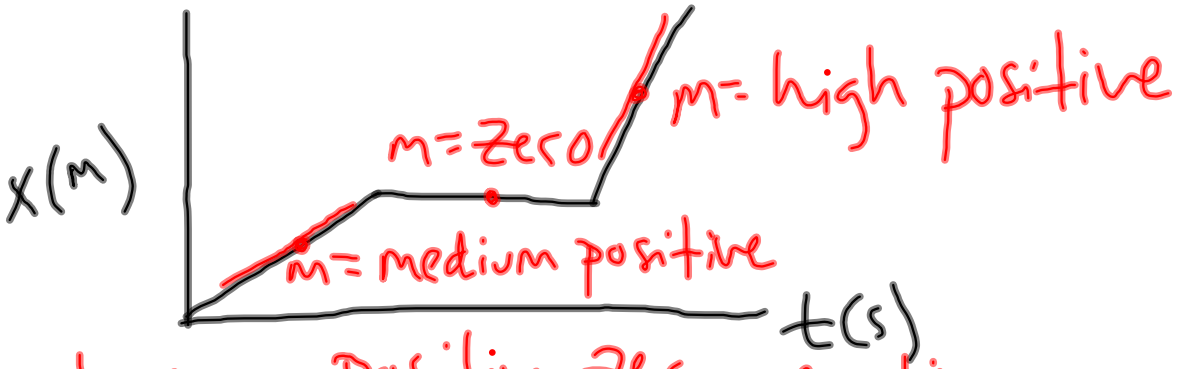
Stop for lunch for .5 h $v = 0$ km/h

60 km in 1.5 h $\quad v = 40$ km/h

$$\text{total } v = \frac{x_f - x_i}{t_f - t_i} = \frac{160\text{ km} - 0\text{ km}}{3\text{h} - 0\text{h}}$$

$$= 53.3 \text{ km/h}$$

- instantaneous



slopes → positive, zero, negative

high, medium, low

- get instaneous velocity from slope of tangent line at a point